

CLAIMS:

1. A warming device for fuel cell system having a fuel battery and a power storage device, comprising:

5 a first heating device that heats the power storage device;

a second heating device that heats the fuel battery by using electricity of the power storage device; and

10 a control device, wherein, in warming of the fuel cell system, the control device first drives the first heating device to heat the power storage device to a preset temperature, and then drives the second heating device.

2. The warming device according to claim 1, wherein,
15 after part of the fuel battery heated by the second heating device reaches a temperature that allows power generation, the control device causes the part of the fuel battery to start generating power.

20 3. The warming device according to claim 2, wherein the fuel cell has a plurality of cell units that are independent from one another, and wherein, after one of the cell units reaches a temperature that allows power generation, the control device causes the one of the cells to start generating
25 power.

4. The warming device according to claim 1, wherein the first heating device is driven by the electricity of the power storage device.

30 5. The warming device according to claim 1, wherein the first heating device has a main heating body and an auxiliary heating body, wherein the main heating body heats the power storage device with the electricity of the power storage
35 device, and wherein the auxiliary heating body heats the

storage device by using energy other than the electricity of the power storage device.

5 6. The warming device according to claim 5, wherein the power storage device is a nickel metal hydride battery, and wherein the auxiliary heating body is driven by a storage battery having a better output property at a low temperature than the nickel metal hydride battery.

10 7. The warming device according to claim 6, wherein the storage battery is a lead-acid battery.

15 8. The warming device according to claim 7, wherein the fuel cell system is mounted on a vehicle, and wherein the lead-acid battery is also used as a power source for supplying power to electrical equipment of the vehicle.

20 9. The warming device according to claim 1, further comprising a temperature detection device for detecting a temperature of the fuel battery, wherein the control device determines whether warming of the fuel cell system is required based on the temperature of the fuel battery detected by the temperature detection device.

25 10. A warning device for fuel cell system having a fuel battery and a power storage device, comprising:

 a first temperature sensor that detects a temperature of the fuel battery;

30 a second temperature sensor that detects a temperature of the power storage device;

 a first heating device that heats the power storage device;

 a second heating device that heats the fuel battery by using electricity of the power storage device; and

35 a control device, wherein the control device determines

whether warming of the fuel cell system is required based on the temperature of the fuel battery detected by the first temperature sensor, wherein, when warming of the fuel cell system is required, the control device drives the first heating device to heat the power storage device, and wherein, when the temperature of the power storage device detected by the second temperature sensor reaches a preset temperature, the control device drives the second heating device so that the fuel battery starts generating power.

11. The warming device according to claim 10, wherein, after part of the fuel battery heated by the second heating device reaches a temperature that allows power generation, the control device causes the part of the fuel battery to start generating power.

12. The warming device according to claim 11, wherein the fuel cell has a plurality of cell units that are independent from one another, and wherein, after one of the cell units reaches a temperature that allows power generation, the control device causes the one of the cells to start generating power.

13. The warming device according to claim 10, wherein the first heating device is driven by the electricity of the power storage device.

14. The warming device according to claim 10, wherein the first heating device has a main heating body and an auxiliary heating body, wherein the main heating body heats the power storage device with the electricity of the power storage device, and wherein the auxiliary heating body heats the storage device by using energy other than the electricity of the power storage device.

15. The warming device according to claim 14, wherein the power storage device is a nickel metal hydride battery, and wherein the auxiliary heating body is driven by a storage battery having a better output property at a low temperature than the nickel metal hydride battery.

16. The warming device according to claim 15, wherein the storage battery is a lead-acid battery.

17. The warming device according to claim 16, wherein the fuel cell system is mounted on a vehicle, and wherein the lead-acid battery is also used as a power source for supplying power to electrical equipment of the vehicle

18. A method for controlling a warming device for fuel cell system having a fuel battery and a power storage device, comprising:

heating the power storage device to a preset temperature by using a first heating device in warming of the fuel cell system; and

heating the fuel battery with a second heating device by using electricity of the power storage device after a temperature of the power storage device reaches the preset temperature.

19. A fuel cell vehicle that has a fuel cell system having a fuel battery, a power storage device, and a warming device, wherein the warming device includes:

a first heating device that heats the power storage device;

a second heating device that heats the fuel battery by using electricity of the power storage device; and

a control device, wherein, in warming of the fuel cell system, the control device first drives the first heating device to heat the power storage device to a preset

temperature, and then drives the second heating device.